

Application No.: 10/669,153

Docket No.: JCLA12271

REMARKS**Present Status of the Application**

The specification was objected to for not supporting Claim 1, lines 17+; Claim 11/1 was objected to because "said receiving section" in line 2 lacks sufficient antecedent basis. Claim 19 was rejected under 35 U.S.C. 112 as not supported by the specification, and Claims 1, 3, 11 and 19 rejected under the same for some terms are indefinite. Claims 1, 11 and 19 were rejected under 35 U.S.C. 102(b) as being anticipated by Welschhof et al. (US 3,879,960), and Claims 1, 3, 11 and 19 rejected under the same as being anticipated by Hartz et al. (US 5,453,052). The Office Action also stressed that Claim 5 does not belongs to Species I that includes Claims 1, 3, 11 and 19.

In response, Applicants have amended Claims 1 and 11 for clarification and submitted the following remarks. Reconsideration of Claims 1, 3, 11 and 19 and Claim 5 is respectfully requested.

Discussion of Objection to Specification

The Office Action mentioned, in pages 2, that the detailed description of the specification of the elected species fails to provide proper antecedent basis for the subject matter in claim 1, lines 17+.

Applicants have mentioned in the previous response that the feature in Claim 1, lines 17+ is mentioned in the Summary of the specification, but Examiner considered that the feature should also be described in the Detailed Description. Applicants respectfully point out that the feature is also described in page 15, line 16 to page 16, line 5 of the Detailed Description, though in a slightly different wording.

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Specifically, the description of "*The inner cylindrical surface 18 of the cage 3 has an inner diameter D_3 coinciding with the outer diameter D_1 of the joint inner ring 2, as shown in Fig. 4 (a) and (b), thus allowing the joint inner ring 2 to pass therethrough*" in page 15, lines 23-27 can support the description of "*the region located rearwardly of the axial center is capable of allowing the axial movement of the joint inner ring*" in Claim 1, because the passing of the joint inner ring through the cage is namely an axial movement of the same. According to Fig. 1(a), the joint inner ring 2 can pass through the cage 3 *only in the axial direction* of the fixed type constant velocity joint.

Meanwhile, the description of "*the outer spherical surface 12 of the joint inner ring 2 is in abutment against the inner spherical surface 17 of the cage 3*" in page 16, lines 3-5 can support the description of "*the region located forwardly of the axial center is capable of controlling the forward movement of the joint inner ring*" in claim 1, since the abutment region is located forwardly of the axial center (center of the fixed type constant velocity joint) and the abutment-type arrangement of the joint inner ring and the cage can control the forward movement of the joint inner ring, as shown in, for example, Fig. 1(a).

Nevertheless, Applicants have amended the specification by adding a new paragraph substantially corresponding to the subject matter of Claim 1, line 17⁺.

Discussion of the Objection to Claim 1/11

The Office Action mentioned in Page 2 that "said receiving section" in line 2 [of Claim 11] lacks sufficient antecedent basis. Applicants have noted that Claim 11 is dependent from Claim 1 or 3 but only Claim 3 mentions "*a receiving section*". Therefore,

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Applicants have restricted Claim 11 to depend on Claim 3 only, and respectfully request withdrawal of the objection.

Rejection to Claim 19 under 35 U.S.C. 112, First Paragraph

The Office Action indicated on page 3 that, the limitations in Claim 19 concerning the relative position of "O₁" or "O₂" to "O" are contradictory to those described on page 14, lines 15-17 and 21-23 of the specification.

In response, Applicants have amended the paragraph on page 14, lines 10-27, to clarify the invention. Support for the amendment can be found in Fig. 1(a). Therefore, Claim 19 is supported by the original disclosure.

Rejections to Claims 1, 3, 11 & 19 under 35 U.S.C. 112, Second Paragraph

Claims 1, 3, 11 and 19 were rejected under 35 U.S.C. 112, second paragraph, for some terms are indefinite. In response, Applicants have

- a) replaced the phrase "*an joint center*" in Claim 1 with "*a center of the fixed type constant velocity joint*";
- b) amended "*the track groove in the joint outer ring*" as "*each of the track grooves in the joint outer ring*";
- c) defined "*a mouth innermost side*" as "*a mouth innermost side of the joint outer ring*";
- d) amended "*the track groove in the joint inner ring*" as "*each of the track grooves in the joint inner ring*";
- e) defined "*a mouth opening side*" as "*a mouth opening side of the joint outer ring*";

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- f) amended "*a region located forwardly/rearwardly*" as "*a first/second region of the cage located forwardly/rearwardly*"; and
- g) amended "*an axial center*" as "*the center of the fixed type constant velocity joint*" because the two terms are equivalent.

In view of the above amendments, withdrawal of the rejections is requested.

Discussion of Rejections under 35 USC 102(b)

Claims 1, 11 and 19 were rejected as being anticipated by Welschof et al., and Claims 1, 3, 11 and 19 were rejected as being anticipated by Hartz et al, wherein Claims 3, 11 and 19 are dependent from independent Claim 1.

One feature of Claim 1 is that the joint outer ring has a rear *open* end that has an inner diameter *larger* than an outer diameter of the joint inner ring. Please also note that the rear open end of the joint outer ring is *opposite to* the mouth opening side of the same, *as defined in the specification and the drawings of this invention*.

Welschof et al. fails to disclose the above feature. According to the definition of this invention, the joint outer ring 2 in Fig. 1 of Welschof et al. does not even have a rear *open* end, because the rear end thereof, which is opposite to the mouth opening side for insertion of the shaft 3, has a *closed* spherical surface. That is, the joint outer ring 2 in Welschof et al. has a rear *closed* end but not a rear *open* end.

Hartz et al. also fails to disclose the above feature of Claim 1. Please refer to any of Figs. 1-6 of Hartz et al., the joint outer ring of each joint structure does have a rear open end, but the inner diameter of the rear open end of the joint outer ring is apparently *smaller* than the outer diameter of the joint inner ring, as being contrary to the case of Claim 1.

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For at least the above reasons, Applicants respectfully submit that independent Claim 1 and its dependent Claims 3, 11 and 19 patently define over the cited prior art.

Further Discussion for the Necessity of Withdrawing Claim 5

The Office Action stated on Page 7 that only Fig. 17 shows the limitations of claim 5 (the curvature radius of the outer spherical surface of the joint inner ring *smaller* than that of the inner spherical surface of the cage), and elected Species I is expressly disclosed at page 15, line last to page 16, line 5 as having a structure which does not read on the limitations in claim 5. Applicants respectfully disagree with this assertion for the reasons set forth.

The words in page 15, line last to page 16, line 5, "*since the inner spherical surface 17 of the cage 3 coincides with the outer spherical surface 12 of the joint inner ring 2 when the joint inner ring 2 is in its normal position, the outer spherical surface 12 of the joint inner ring 2 is in abutment against the inner spherical surface 17 of the cage 3*", merely indicates that the inner spherical surface of the cage *contacts with* the outer spherical surface of the joint inner ring. In Fig. 1(a) corresponding to page 15, line last to page 16, line 5, the radius of curvature of the outer spherical surface of the joint inner ring is apparently *smaller* than that of the inner spherical surface of the cage, *just as in the cases of Claim 5 and Fig. 17*. Hence, Claim 5 belongs to elected Species I that includes Claims 1, 3, 11 and 19, and should not be withdrawn from consideration.

Moreover, the structure in Fig. 17 is different from that in Fig. 1(a) *in other aspects*, and therefore belongs to another Species.

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Indication of Allowability

Although the Amendment of November 8, 2005 was not entered, in a telephone communication of November 23, 2005 between Examiner Greg Binda and the undersigned, Examiner Binda indicated that claims 1, 3, 5, 11 and 19 as amended in the Amendment of November 8, 2005 are allowable. Claims 1, 3, 5, 11, and 19 presented in this Preliminary Amendment are identical to that presented in the Amendment of November 8, 2005.

Request to Reinstate the Withdrawn Claims

Claims 2, 4-10, and 12-17 have been withdrawn by the Examiner.

Applicants respectfully request that previously withdrawn claims 2, 4-10 & 12-17 be reinstated as being dependent from allowable generic claim 1 according to § 806.04(d) of the MPEP. Claim 1 is a generic claim because it reads on Species I-VII defined before.

Applicants have amended multiple dependent claims 12-14 to satisfy the scopes of Species I-VII.

Reasons of Claim 1 Reading on Species I-VII

Allowable Claim 1 surely reads on elected Species I. According to the Requirement for Restriction/Election of 10/01/2004, Species II is shown in Fig. 9, Species III in Figs. 10 & 12, Species IV in Figs. 11 & 12, Species V in Figs. 13 & 14, Species VI in Figs. 15-17 and Species VII in Fig. 18. Please refer to Figs. 9(a), 10, 11, 14, 15(a) and 18(b) respectively showing Species II, III, IV, V, VI and VII, it is apparent that each figure includes all the limitations of claim 1 because in each figure:

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- 1) the arrangement of the cylindrical joint outer ring and its track grooves, the joint inner ring and its track grooves, the torque transmitting balls and the cage satisfy the corresponding limitations of claim 1;
- 2) the curvature center of the track grooves in the joint outer ring and that of the track grooves in the joint inner ring are axially offset by the same distance with respect to the center of the fixed type constant velocity joint, each of the track grooves in the joint outer ring has an arcuate bottom in the mouth innermost side of the joint outer ring and a straight bottom on a mouth opening side, and each of the track grooves in the joint inner ring has an arcuate bottom on the mouth opening side of the joint outer ring and a straight bottom on the mouth innermost side, as in Claim 1; and
- 3) the rear open end of the joint outer ring has an inner diameter larger than the outer diameter of the joint inner ring, and the inner diameter surface of the cage is a surface having a shape such that a first region of the cage located forwardly of the center of the fixed type constant velocity joint is capable of controlling the forward movement of the joint inner ring while a second region of the cage located rearwardly of the center of the fixed type constant velocity joint is capable of allowing the axial movement of the joint inner ring, as in Claim 1.

Please note that in Figs. 10 & 11, each track groove in the joint inner ring also has a straight bottom on the mouth innermost side of the joint outer ring, while the axial length of the straight bottom is somewhat short for a buildup 26 is disposed at the end thereof.

Accordingly, claim 1 reads on Species I-VII and is a generic claim. It is also noted that Claims 3, 5 and 19 are also generic claims reading on Species I-VII for their features are clearly shown in each of the representative figures 1, 9(a), 10, 11, 14, 15(a) and 18(b).

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Therefore, previously withdrawn claims 2, 4-10 and 12-17 corresponding to Species III-VI should be reinstated according to §806.04(d) of the MPEP. The respective species of claims 2, 4, 6-10 and 12-17 are explained below.

Claim 2 including 8 torque transmitting balls belongs to Species VI (Figs. 15-17).

Claim 4 is dependent from Claim 2 of Species VI and has the feature of *a receiving section with a concave spherical surface axially supporting the joint inner ring* as shown in Fig. 15(a) of Species VI, and therefore belongs to Species VI.

Claim 6 is dependent from Claim 4 of Species VI and has the feature of *the curvature radius of the outer spherical surface of the joint inner ring being smaller than that of the inner spherical surface of the cage* as shown in Fig. 17 of Species VI, and therefore belongs to Species VI.

Claim 7 is dependent from generic Claim 3 and has a feature of *the outer spherical surface being provided by a member separate from the joint inner ring* as shown in Fig. 14 to Species V, and therefore belongs to Species V.

Claim 8 is dependent from Claim 4 of Species VI and has the feature of *the outer spherical surface being provided by a member separate from the joint inner ring* as shown in Fig. 15(a) of Species VI, and therefore belongs to Species VI.

Claim 9 dependent from generic Claim 5 features *the outer spherical surface being provided by a member separate from the joint inner ring* as shown in Fig. 14 of Species V, and therefore belongs to Species V.

Claim 10 is dependent from Claim 6 of Species VI and has the feature of *the outer spherical surface being provided by a member separate from the joint inner ring* as shown in Fig. 15(a) of Species VI, and therefore belongs to Species VI.

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Claim 12 as amended is dependent from generic Claims 3 & 5 and has the feature of *a receiving member and a stem shaft fixed through the receiving member* as shown in Fig. 14 of Species V, and therefore belongs to Species V.

Claim 13 as amended is dependent from generic Claims 3 & 5 and has the feature of *a receiving member fixed directly to the rear open end of the joint outer ring* as shown in Fig. 14 of Species V, and therefore belongs to Species V.

Claim 14 as amended is dependent from generic Claims 1, 3 & 5 and has the feature of *"the track grooves in the joint inner ring is formed within the range of a maximum operating angle"* as shown in Figs. 10-11, and therefore belongs to Species III-IV.

Claim 15 is dependent from Claim 11 whose feature (*the receiving section being provided by a stem shaft ...*) is shown in Fig. 10 of Species III and has the feature of *"the track grooves in the joint inner ring is formed within the range of a maximum operating angle"* as shown in Fig. 10 of Species III, and therefore belongs to Species III.

Claim 16 is dependent from Claim 12 dependent from generic Claims 3 & 5, and the features of Claims 3, 5 & 12 and that of Claim 16 (*the track grooves in the joint inner ring is formed within the range of a maximum operating angle*) are all shown in Fig. 11 of Species IV. Therefore, Claim 16 belongs to Species IV.

Claim 17 is dependent from Claim 13 dependent from generic Claims 3 & 5, and the features of Claims 3, 5 & 13 and that of Claim 17 (*the track grooves in the joint inner ring is formed within the range of a maximum operating angle*) are all shown in Fig. 11 of Species IV. Therefore, Claim 17 belongs to Species IV.

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CONCLUSION

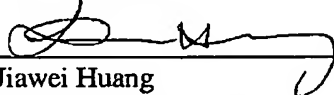
For the foregoing reasons, it is believed that Claim 1 is a generic claim reading on Species I-VII of this invention and previously withdrawn Claims 2, 4-10 and 12-17, which include all the limitations of generic independent Claim 1 and read on Species III-VI, respectively, should be reinstated according to § 806.04(d) of the MPEP.

If the Examiner believes that a telephone conference would expedite the examination and the allowance of the above-identified patent application, the Examiner is invited to call the undersigned.

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